

*Iecophagus* are given as "abundant" in May at Fort Chippewyan, and the White-crowned Sparrow, found at Fort Rae, is recorded as *Zonotrichia intermedia*. While some of these records are surprising, to say the least, and possibly, with some others not here mentioned, may require revision, great credit is due Mr. Russell for the successful accomplishment of a most difficult journey, often under circumstances requiring a high order of courage, determination, and intelligence, and the Iowa University is to be congratulated upon the very substantial returns, in the way of collections and information, that have resulted from the young explorer's efforts as its representative. — J. A. A.

**Loomis on California Water Birds.**—Part IV<sup>1</sup> of Mr. Loomis's notes on California Water Birds relates to observations made off the coast of Monterey, September 18 to November 14, 1896. For nearly two months almost daily trips were made upon the ocean from the Hopkins Seaside Laboratory at Pacific Grove, and a summary of each day's observations is given (pp. 278-303). Then follow his 'Conclusions,' and finally a formal list of the species observed. The 'Conclusions' relate to the subject of migration, and treat of 'Migration Southward after Breeding Season,' 'Guidance by Physical Phenomena,' 'Guidance by Old Birds,' and 'Cause of Migration.' Especial attention is called to the fact that certain species of Petrels and Shearwaters found in our northern waters in summer breed either in the southern hemisphere or in the tropics. Mr. Loomis, in view of his experiences with the water birds off the California coast, has reached the conclusion that they are guided in their movements by the shore line and its prominent landmarks, and that in their sea journeys they may be able to direct their course by the currents and winds, and possibly by "celestial phenomena." He also considers it "reasonable to conclude that the young in the journey from their birthplace to the winter home of the species are dependent upon the guidance of the old birds who know the way because they have traveled it." "The causes of migration" he considers to be (1) "physical or outward," and (2) "psychological or inward." "In fine, it is maintained that winter, past and present, with its failure of food is the outward cause of all migratory movement." The "psychological or inward" cause of migration resolves itself into 'Inheritance,' 'Education' and 'Habit.' "It is not unreasonable" he says, "to suppose that there exists in migratory birds an inherent desire for travel and an inherited talent for geography. The ease with which birds find their nests in chaparral or in a sea of tules manifests that they possess memory of direction and locality in a remarkable degree. In migratory

<sup>1</sup> California Water Birds. No. IV, Vicinity of Monterey in Autumn. By Leverett M. Loomis, Curator of the Department of Ornithology. Proc. California Acad. Sci., Third Series, Vol. II, No. 3, pp. 277-322, pl. xv (map). Issued Feb. 12, 1900.

birds this faculty may attain higher development, becoming a talent for geography. The restlessness sometimes displayed in seasons of migration by wild birds reared in captivity is perhaps indicative of an incentive to travel. But here heredity seems to end and *education* to begin, for there appears to be guidance by old birds and guidance by physical phenomena. . . . Intelligence and habit remain to account for the constancy of migratory birds to time and place. . . . In short, it is believed that the causes of migration are simple facts and not impenetrable mysteries lying beyond the domain of scientific enquiry. . . . To sum up the whole matter in a single sentence: It is held that bird migration is a habit evolved by education and inheritance which owe their origin and perpetuation to winter with its failure of food."

Doubtless few careful students of migration will disagree with Mr. Loomis in respect to the propositions above quoted, and very few of the points raised have the interest of novelty, they having been in the main stated before by Mr. Loomis, and independently by others. But he gives us very little satisfaction, and nothing new, on the subject of what prompts the return migration. What he has to say on this point (mainly in a footnote on p. 315) is a rather weak attempt at destructive criticism of the views held by others.

The annotated list (pp. 317-322) of birds observed off Monterey during the two months of observations forming the occasion of the present paper numbers 42, several of which, however, were seen but once or twice; the bulk of the birds met with were a few species of Gulls, Shearwaters, Ducks and Phalaropes. Among the Shearwaters, Buller's Shearwater (*Puffinus bulleri*) is recorded for the first time as a North American bird, on the basis of a specimen captured by Mr. Loomis off Point Pinos, Nov. 6, 1896. It is also the fourth specimen known to science, the others, including the type, having been taken in New Zealand waters. "It may be confidently expected," says Mr. Loomis, "that persistent observation off Monterey will add to the list of pelagic wanderers from austral regions."—J. A. A.

Stone on 'The Summer Molting Plumage of Certain Ducks.'<sup>1</sup>—The collection of Arctic birds recently made at Point Barrow, Alaska, by Mr. E. A. McIlhenny, includes large series of various species of Eiders which have formed the basis of Mr. Stone's observations here detailed. Mr. Stone finds that there is a supplemental summer plumage, or post-nuptial dress, in not only the King Eider, the Pacific Eider, the Spectacled Eider, and Steller's Eider, but also in the Red-breasted Merganser. It has also been recorded as occurring in the Pintail and in various other species of Ducks in which the males and females are markedly different in coloration, and the inference is that this double summer moult is general among

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<sup>1</sup>The Summer Molting Plumage of Certain Ducks. By Witmer Stone. Proc. Acad. Nat. Sciences Phil., 1899, pp. 467-472. Separates issued Dec. 1, 1899.